REMARKS

This paper and the accompanying Request for Continued Examination are responsive to the Office Action dated July 12, 2006 (the "Final Office Action").

Claims 1-21 were previously pending in the application.

Claims 1, 12, and 21 have been amended. Support for the amendments may be found, for example in the Specification as originally filed on p. 7.

No claims have been added or canceled in this paper.

Accordingly, claims 1-21 remain pending in the application.

Claims 1-21 stood rejected in the Final Office Action.

Claims 1-10, 12, and 16-21 stood rejected under 35 U.S.C. § 102(b) as being anticipated by F. S. Hillier and G. J. Lieberman, *Introduction to Operations Research*, 6th ed., McGraw-Hill, Inc., 1995 ("*Hillier*"). Claims 11 and 13-15 stood rejected under 35 U.S.C. § 103(a) as being unpatentable over *Hillier*.

Applicant expresses gratitude for the discussion between the Examiner and the undersigned representative regarding the pending claims and cited art on September 14, 2006.

Applicant offers that the claims are allowable and respectfully requests reconsideration in view of the following remarks.

Rejections Under § 102(b)

Claims 1-10, 12, and 16-21 stood rejected under § 102(b) as being anticipated by *Hillier*. While not conceding that the Examiner's cited reference qualifies as prior art, but instead to expedite prosecution, Applicant has chosen respectfully to traverse the rejection as follows. Applicant reserves the right, for example in a continuing application, to establish that the Examiner's cited reference does not qualify as prior art as to an invention embodiment previously, currently, or subsequently claimed.

Applicant's claim 1 has been amended. Claim 1, as amended, is reproduced below.

1. A computer-implemented method comprising:

optimizing a multivariate representation of resources using multiple single-variable optimizations, wherein the resources are used in producing a set of products, and the resources, the set of products and their respective connectivities are represented in a product space plan, the optimizing comprising

converting a non-linear expected value function associated with the resources and products into a closed form expression;

transforming the product space plan into a working transformed space plan, wherein the products are transformed into working elements;

performing a loading step to form elemental blocks as a function of a single variable of the multivariate representation with elements being loaded with resources that gate production of the element;

examining the elemental blocks to determine if a first element has not been loaded with a corresponding first resource that gates production of the first element;

if the examining indicates that the first element has not been loaded with the first resource, performing a re-loading step to form elemental blocks as a function of a single variable of the multivariate representation with the first element being reloaded with the first resource;

solving for the maximum of each elemental block over each associated single variable of the multivariate representation, wherein the solving is performed by a computer; and

determining the optimum level of resources as a function of the solved for maximums.

Claim 1 has been amended to clarify that the method includes an optimization that "us[es] multiple single-variable optimizations." This limitation clarifies that various embodiments of the method may be used in a divide-and-conquer approach to dealing with multivariate problems. Applicant respectfully submits that this limitation is not disclosed in the cited art.

Applicant also maintains that other limitations of independent claim 1 are also not disclosed in the cited art. For example, *Hillier* fails to teach the limitations of examining the elemental blocks to determine if a first element has not been loaded with a corresponding first resource that gates production of the first element, as discussed in Applicant's previous response dated April 24, 2006.

The examining in claim 1 may be used, for example, in certain embodiments of the invention to address situations in which two components may be shared by two or more products. The examination may be used to identify situations in which elements have not been initially loaded with the appropriate gating components, so that a subsequent reloading may be performed as needed in various implementations of the invention. See, e.g., Specification at 24, lines 2-4 and 7-13.

Hillier also does not disclose the conditional reloading of elements based on an examination of elemental blocks, or the performing a loading step to form elemental blocks as a

function of a single variable of the multivariate representation, as discussed in Applicant's previous response dated April 24, 2006.

At least for these reasons, independent claim 1 and all claims dependent therefrom are allowable under § 102(b). At least for similar reasons, independent claims 12 and 21 and all claims dependent therefrom are also allowable under § 102(b).

Rejections Under § 103(a)

Claims 11 and 13-15 stood rejected under § 103(a) as being unpatentable over *Hillier*. Applicant respectfully submits that claims 11 and 13-15 are allowable at least for the reasons discussed above, since these claims depend variously on allowable claims 1 and 12.

Additionally, Applicant respectfully disagrees with the reasoning presented in support of the rejections of claims 11 and 13-15. With regard to these claims, the Office Action notes on page 14 and 15 that *Hillier* does not expressly disclose using an inverse Cholesky transform, or a demand distribution that is a member of the elliptical family of distributions, or a multivariate normal distribution. In support of the rejections, however, the Office Action argues that these claims are unpatentable under § 103(a) because these features may be well-known. Applicant respectfully disagrees with this reasoning.

While it may be stated that a certain function is well known, such a statement, even if true, cannot be extrapolated to imply that the function is or might be well suited for a particular task. Applicant respectfully submits that the selection of a particular mathematical function for a particular task is not made obvious merely because the function is well known. In this case, the claims propose the use of particular mathematical formulations in conjunction with specific acts in the context of optimization problems as set forth by the limitations of the claims. The use of

an inverse Cholesky transformation, or a member of the elliptical family of distributions, or a multivariate normal distribution in the context of claims 11 and 13-15 is not made obvious merely because these mathematical formulations may themselves be previously known.

With regard to rejections that rely on "well known" prior art, the MPEP states:

> If the examiner is relying on personal knowledge to support the finding of what is known in the art, the examiner must provide an affidavit or declaration setting forth specific factual statements and explanation to support the finding.

(MPEP § 2144.03(C). See also, 37 C.F.R. § 1.104(d)(2).)

Applicant respectfully requests that a reference be cited in support of the position that it is within the level of ordinary skill in the art to use a demand distribution that is a member of the elliptical family of distributions, or to use a multivariate demand distribution that includes a multivariate normal distribution, or to transform a product space plan into a working transformed space plan using an inverse Cholesky transform, in the contexts of Applicant's claims 11 and 13-15. Alternatively, if it is the Examiner's position that these rejections are based on personal knowledge, Appellant respectfully requests that this position be supported by an affidavit or declaration in accordance with MPEP § 2144.03(C) and 37 C.F.R. § 1.104(d)(2). Without such support, Applicant respectfully submits that the Final Office Action does not establish that the claims are unpatentable, and Applicant respectfully submits that claims 11 and 13-15 are allowable under § 103(a).

CONCLUSION

Applicant submits that all claims are now in condition for allowance, and an early notice to that effect is earnestly solicited. Nonetheless, should any issues remain that might be subject

to resolution through a telephonic interview, the Examiner is requested to telephone the undersigned.

I hereby certify that this correspondence is being deposited with the United States Postal Service as First Class Mail in an envelope addressed to: Mail Stop RCE, Commissioner for Patents, P. O. Box 1450, Alexandria, Virginia, 22313-1450, on October 12, 2006.

Attorney for Applicant — Date of Signature: 2006Oct 12

Respectfully submitted,

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